

either caused tetanus in the course of four to seven hours, the animals previously exhibiting hyperæsthesia, or sometimes a kind of ataxia, which appeared to be due to another substance.

When administered to fowls in doses of 4 to 12 grammes, for three months, it caused clonic movements. On treating the maize that had already been exhausted by alcohol, a third substance was obtained, which in its general odor, aspect and taste, resembled ergotin. This third substance when injected into frogs, caused dyschromia, narcotism, and paralysis of the legs, especially of the right side. The frogs could still swim but they could not preserve their horizontal position; when placed on the table they could not recover themselves. Chronic convulsion of the posterior limbs then occur. The pulsations of the heart are slowed, and death follows in four hours. When given to cats it causes vomiting, then paralysis with clonic spasms of the feet and muzzle. Death takes place in an hour, or an hour and a half. In dogs, when administered by the stomach, paresis of the feet is produced. The animal is unable to leap, and when irritated it falls forward on the nose, at a later period spasms occur in the hind feet; if compelled to walk about it falls on one side; it cannot support itself on its forepaws, Mydriasis exists. The temperature falls to 31° C. and the respiration is rendered slower. These symptoms, M. Lombroso thinks, explain the different phenomena of pellagra, and especially that form to which belongs trismus, opisthotonos, paralysis of the legs, with clonic convulsions, and disorders of sensation, as that of a chord passing around the medulla, occur. He has employed the extract in solution in oil, in various inveterate diseases of the skin, as eczema, and psoriasis. *Gaz. Méd de Paris (Practitioner, March, 1876.)*

THE HYPODERMIC INJECTION OF MORPHIA IN INSANITY.—Dr. Jno. M. Diarmid, *Jour. of Mental Science*, April, 1876, at the close of a rather lengthy article, offers the following conclusions, as the result of his observations and experiments:

1. Of all single drugs, opium, or its alkaloid morphia, is the most potent and reliable hypnotic and sedative in the treatment of insanity.
2. Morphia, administered sub-cutaneously, is more rapid in its action and more powerful in its effects, than when given by the mouth.
3. By hypodermic injection, not only irregularity in action dependent on gastric conditions, but digestive disorders incident to the stomachic exhibition of morphia, are avoided.
4. The sub-cutaneous, is the easiest method of giving opiates where a patient refuses to take medicine, and always the most exact.
5. Of various adjuncts to opiates, warm baths are the most useful.
6. Attacks of acute and recurrent mania, and paroxysms of excitement in chronic mania and dementia, may be cut short in the outset, or beneficially controlled, by morphia sub-cutaneously administered.

7. In such cases (*i. e.*, acute mania, etc.), the tongue becomes clearer, and the appetite, as a rule, improved by this treatment.

8. Morphia, so administered, has no marked tendency to cause constipation; and even in melancholia, by alleviating the misery, and thus lessening the waste of nervous force, it predisposes to improvement in appetite and digestion.

9. Vomiting, the only unpleasant symptom apt to occur with the hypodermic treatment, is generally due to over-eating, or digestive disorders existing previous to injection, and may, by care as to the time of administration, be avoided; and when it happens, is frequently beneficial, rather than otherwise.

It must, however, be borne in mind, that many of the phenomena referred to are still *sub judice*, and that the opinions enunciated, may require considerable modification, as the result of further inquiries.

LACTIC ACID AS A HYPNOTIC.—Dr. E. Mendel, *Deutsche Med. Wochenschrift*. No. 17, April 29, 1875, gives the results of two month's experiments with lactic acid as a hypnotic, both in his private practice and in the *Irrenanstalt* at Pankow, of which he was the directing physician. Preyer, *Centralbl. f. d. Med. Wissensch.* No. 35, 1875, had previously recommended the lactate of soda for the production of sleep, and Lothar Meyer had experimented, both with this substance and lactic acid, and had come to the conclusion, that they only exceptionally served as a sufficient substitute for the more usual remedies of this class, and that they frequently produced disturbances in the digestive apparatus.

The lactic acid used by Mendel was administered, for the most part, by injection, diluted with water and sufficient carbonate of soda added to make the mixture neutral, and avoid severe rectal irritation. The dose was between five and twenty grammes (= from 75—300 grs).

Dr. Mendel concludes from his experience, that lactic acid is an efficient, sleep-producing agent in many cases, though not in all, and this last, may also be said of morphia and chloral. In cases where pain is the cause, or accompaniment of sleeplessness, lactic acid is not indicated. It is recommended, on the other hand:

(1) In insomnia, occurring in the course of general asthenic, diseased conditions, such as commonly occurs during convalescence of serious disease.

(2) For the quieting or calming of the insanity, especially the painfully irritating forms.

(3) Experimentally, its methodic employment is recommended in certain psychic disorders, in which the exact indications for future treatment are still in reserve.

SUB-CUTANEOUS INJECTIONS OF DIGITALINE.—Witkowsky, *Deutsch. Arch. f. klin. Medicin.* (abstr. in *Revue des Sci. Médicales*) practiced the sub-cutaneous administration of digitaline on four insane patients, using a